In addition to the proposed structures above, Alternative 1 will require an approximate 700-foot long retaining wall along the east side of the proposed flyover ramp north of where it ties into NC 68. The retaining wall is needed to minimize impacts to Brush Creek.

7. Bicycle and Pedestrian Provisions

The I-73 Connector will function as an interstate facility; therefore, accommodations for bicyclists or pedestrians will not be included in the final design.

8. Traffic Capacity Analysis

The level of service (LOS) is a "qualitative measure that characterizes operational conditions within a traffic stream and their perception by motorists and passengers. The descriptions of individual levels of service characterize these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations, from A to F, with LOS A representing the best operating conditions and LOS F the worst." These levels of service are defined in the Highway Capacity Manual, Special Report 209, Third Edition, 2000, Transportation Research Board. These are described as follows:

- LOS A describes completely free-flow conditions. The operation of vehicles is virtually unaffected by the presence of other vehicles, and operations are constrained only by the geometric features of the highway and driver preferences. The ability to maneuver within the traffic stream is high. Minor disruptions to flow are easily absorbed at this level without causing significant delays or queuing.
- LOS B is also indicative of free flow, although the presence of other vehicles begins to be noticeable. Average travel speeds are somewhat diminished from LOS A. Minor disruptions are still easily absorbed at this level, although local deterioration in LOS will be more obvious.
- LOS C represents a range in which the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream, and to select an operating speed, is now clearly affected by the presence of other vehicles. Minor disruptions may be expected to cause serious local deterioration in service, and queues may form behind any significant traffic disruption. Severe or long-term disruptions may cause the facility to operate at LOS F.
- LOS D borders on unstable flow. Speeds and ability to maneuver are severely restricted because of traffic congestion. Only the most minor of disruptions can be absorbed without the formation of extensive queues and the deterioration of service to LOS F.
- LOS E represents operations at or near capacity, and is quite unstable. Disruptions cannot be damped or dissipated, and any disruption, no matter how minor, will cause queues to form and service to deteriorate to LOS F.
- LOS F represents forced or breakdown flow. It occurs at a point where vehicles arrive either at a rate greater than that at which they are discharged or at a point on a planned facility where forecasted demand exceeds the computed capacity. While operations at such points (and on immediate down-stream sections) will appear to be at capacity or better, queues will form behind these breakdowns. Operations within queues are highly unstable, with vehicles experiencing short spurts of movement followed by stoppages.